AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) In a computer system that accesses a database having one or more data tables, the computer system configured to provide content from the database to a Web server for inclusion in Web based responses to requests for Web based content, the computer system including a cache configured to cache database content included in Web based responses so as to provide more efficient access to the cached database content when formulating subsequent Web based responses, a method for formulating and caching a Web based response in response to receiving a Web based request for database content, the method comprising the following:

an act of determining whether a cache entry for Web based content requested by a request for Web based content already exists in the cache; and

upon determining that the cache entry does not exist, performing the following:

an act of selecting a data table that is to be monitored for content changes, the selected data table selected from among the one or more data tables of the database;

an act of inserting a record for the selected data table into a separate change notification table, the record including versioning information identifying and corresponding to the selected data table, the versioning information retrievable by the Web server to determine when a corresponding cache entry containing cacheable content from the selected data table is invalid;

an act of assigning a trigger to the selected data table, the trigger configured to update the versioning information for the selected table in the change notification table when content in the selected data table is altered;

an act of caching interim results that can be used in the generation of a plurality of different Web responses in a cache entry in the cache, the interim results based on one or more records from the selected data table ~~and one or more records form one or more other data tables~~, the cache entry made dependent on the selected data table by including the versioning information identifying and corresponding to the selected data table in the cache entry;

an act receiving a Web based request for a Web based response that is to include the interim results subsequent to caching the interim results in the cache entry;

an act of querying, at specified intervals, the change notification table for versioning information identifying and corresponding to the selected data table;

an act of receiving current versioning information identifying and corresponding to the selected data table;

an act of comparing the cached versioning information to the current versioning information;

an act of determining how to access the interim results for inclusion in a Web based response based on the results of comparing the versioning information and in response to receiving the Web based request for the portion of content;

an act of accessing the interim results in accordance with the determination; ~~and~~

an act of executing commands to ~~constructing~~ construct a Web based response responsive to the Web based request based on the interim results.;

an act of assigning a database cache dependency to at least a portion of the constructed Web response based on the commands executed during the construction of the Web response using a page file, wherein the page file defines at least one database and at least one table on which the database cache entry is dependent, and further defines the portion of the constructed Web response on which the cache dependency is dependent; and

an act of caching at least a portion of the constructed Web response in a cache entry in the cache.

2. (Previously Presented) The method as recited in claim 1, wherein the act of selecting a data table that is to be monitored for content changes comprises an act of receiving user-input that causes the computer system to select a data table is to be monitored for content changes.

3. (Original) The method as recited in claim 1, wherein the act of selecting a data table that is to be monitored for content changes comprises an act of the computer system automatically selecting a data table in response to a received Web request.

4. (Previously Presented) The method as recited in claim 1, wherein the act of inserting a record for the selected data table into a change notification table compromises an act of inserting the record in response to user-input.

5. (Previously Presented) The method as recited in claim 1, wherein the act of inserting a record for the selected data table into a change notification table compromises an act of the computer system automatically inserting the record in response to a Web request.

6. (Previously Presented) The method as recited in claim 1, wherein the act of inserting a record for the selected data table into a change notification table compromises an act of inserting the record into a SQL table.

7. (Original) The method as recited in claim 1, wherein the act of assigning a trigger to the selected data table comprises an act of receiving user input instructing a trigger to be assigned to the selected data table.

8. (Previously Presented) The method as recited in claim 1, wherein the act of assigning a trigger to the selected data table comprises an act of the computer system automatically assigning a trigger in response to receiving a Web request for content contained in the selected data table.

9. (Previously Presented) The method as recited in claim 1, wherein the act of assigning a trigger to the selected data table comprises an act of the assigning a trigger that, when executed by a processing unit at the computer system in response to content in the selected data table being altered, will update a corresponding change ID in the table change notification table.

Claim 10. (Cancelled).

11. (Previously Presented) The method as recited in claim 1, wherein the act of receiving current versioning information identifying and corresponding to the selected data table comprises an act of receiving updated versioning information that indicates the cache entry is to be invalidated.

Claims 12-35. (Cancelled).

36. (Currently Amended) A computer program product executed at a computer system that access a database having one or more data tables, the computer system configured to provide content from the database to a Web server for inclusion in Web based responses to requests for Web based content, the computer system including a cache configured to cache database content included in Web based responses so as to provide more efficient access to the cached database content when formulating subsequent Web based responses, the computer program product implementing a method for formulating and caching a Web based response in response to receiving a Web based request for database content, the computer program product comprising one or more computer-readable storage media having stored thereon computer executable instructions that, when executed by a processing unit, implement the method including the following:

determine whether a cache entry for Web based content requested by a request for Web based content already exists in the cache; and

upon determining that the cache entry does not exist, perform the following:

select a data table that is to be monitored for data changes, the selected data table selected from among the one or more data tables of the database;

insert a record for the selected data table into a change notification table, the record including versioning information identifying and corresponding to the selected data table, the versioning information retrievable by the Web server to determine when a corresponding cache entry containing cacheable content from the selected data table is invalid;

assign a trigger to the selected data table, the trigger configured to update the versioning information for the selected table in the change notification table when data in the selected data table is altered;

cache interim results that can be used in the generation of a plurality of different Web responses in a cache entry in the cache, the interim results based on one or more records from the selected data ~~table and one or more records from one or more other tables~~, the cache entry made dependent on the selected data table by including the versioning information identifying and corresponding to the selected data table in the cache entry;

receive a Web based request for a Web based response that is to include the interim results subsequent to caching the interim results in the cache entry;

query, at specified intervals, the change notification table for versioning information identifying and corresponding to the selected data table;

receive current versioning information identifying and corresponding to the selected data table.

compare the cached versioning information to the current versioning information;

determine how to access the interim results for inclusion in a Web based response based on the results of comparing the versioning information in response to receiving the Web based request for the portion of content;

accessing the interim results in accordance with the determination ; and

~~construct~~ execute commands to construct a Web based response responsive to the Web based request based on the interim results~~.~~;

assign a database cache dependency to at least a portion of the constructed Web response based on the commands executed during the construction of the Web response using a page file, wherein the page file defines at least one database and at least one table on which the database cache entry is dependent, and further defines the portion of the constructed Web response on which the cache dependency is dependent; and

cache at least a portion of the constructed Web response in a cache entry in the cache.

37. (Previously Presented) The computer program product as recited in claim 36, wherein the one or more computer-readable storage media are physical media.

38. (Previously Presented) The computer program product as recited in claim 36, wherein the one or more computer-readable storage media include system memory.

Claims 39-49. (Cancelled).

50. (Previously Presented) The method as recited in claim 1, wherein the act of determining how to access the interim results comprises an act of determining that the interim results are to be reconstructed from the one or more records in the selected data table and the one or more records in the one or more other data tables.

51. (Previously Presented) The method as recited in claim 50, further comprising:

an act of invalidating the cache entry that includes the interim results based on the comparison of version information in response to receiving the Web based request for the portion of content.

52. (Previously Presented) The method as recited in claim 1, wherein the act of determining how to access the interim results comprises an act of determining that the interim results are to be retrieved from the cache entry.

53. (Previously Presented) The method as recited in claim 1, wherein the act of accessing the interim results in accordance with the determination comprises an act of reconstructing the interim results from one or more records in the selected data table and the one or more records in the one or more other data tables not withstanding that interim results where cached at the computer system when the Web based request was received.

54. (Previously Presented) The method as recited in claim 53, wherein the act of constructing a Web based response responsive to the Web based request based on the interim results comprises including the reconstructed interim results in the Web based response not withstanding that the interim results were cached at the computer system when the Web based request was received.

55. (Previously Presented) The computer program product as recited in claim 36, wherein computer executable instructions that, when executed, cause the computer system to determine how to access the interim results comprise computer executable instructions that, when executed, cause the computer system to determine that the interim results are to be reconstructed from the one or more records in the selected data table and the one or more records in the one or more other data tables.

56. (Previously Presented) The computer program product as recited in claim 55, further comprising:

computer executable instructions that, when executed, cause the computer system to invalidate the cache entry that includes the interim results based on the comparison of version information in response to receiving the Web based request for the portion of content.

57. (Previously Presented) The computer program product as recited in claim 36, wherein computer executable instructions that, when executed, cause the computer system to determine how to access the interim results comprise computer executable instructions that, when executed, cause the computer system to an act of determine that the interim results to be retrieved from the cache entry.

58. (Previously Presented) The computer program product as recited in claim 36, wherein computer executable instructions that, when executed, cause the computer system to access the interim results in accordance with the determination comprise computer executable instructions that, when executed, cause the computer system to reconstruct the interim results from one or more records in the selected database table not withstanding that the interim results were cached at the computer system when the Web based request was received.

59. (Previously Presented) The computer program product as recited in claim 58, wherein computer executable instructions that, when executed, cause the computer system to construct a Web based response based on the interim results comprise computer executable instructions that, when executed, cause the computer system to include a portion of content from the selected database table in the Web based response not withstanding that the interim results were cached at the computer system when the Web based request was received.

60. (Currently Amended) In a computer system that accesses a database having one or more data tables, the computer system configured to provide content from the database to a Web server for inclusion in Web based responses to requests for Web based content, the computer system including a cache configured to cache database content included in Web based responses so as to provide more efficient access to the cached database content when formulating subsequent Web based responses, a method for ~~formulating a Web based response in response to receiving a Web based request for database content~~invalidating a cache entry when changes are detected in a data table, the method comprising the following:

an act of selecting a data table that is to be monitored for content changes, the selected data table selected from among the one or more data tables of the database;

an act of inserting a record for the selected data table into a separate change notification table, the record including versioning information identifying and corresponding to the selected data table, the versioning information retrievable by the Web server to determine when a corresponding cache entry containing cacheable content from the selected data table is invalid;

an act of attaching a trigger to the selected data table, the trigger configured to update the versioning information for the selected table in the change notification table when any record in the selected data table is altered regardless of the mechanism used to alter the record;

an act of constructing interim results from a collection of records, including a plurality of records in the selected data table and one or more records form one or more other data tables, the interim results usable in the generation of a plurality of different Web responses;

an act of caching the interim results in a cache entry in the cache, the cache entry including the versioning information identifying and corresponding to the selected data table;

an act of a cache interface module issuing a blocking querying to the change notification table for versioning information identifying and corresponding to the selected data table, the blocking query ~~blocking on the change notification table~~waiting until versioning information for the selected table is updated before returning the versioning information for the selected data table;

an act of detecting a change to a record in the selected data table, subsequent to issuing the blocking query;

an act of the assigned trigger updating the versioning information for the selected table in the change notification table, subsequent to issuing the blocking query;

an act of the cache interface module receiving the updated versioning information in response to the blocking query;

an act of comparing the cached versioning information to the updated versioning information; and

an act of invalidating the cache entry for the interim results based on the results of the comparison.

61. (New) The method as recited in claim 1, wherein a plurality of cache entries in the cache are made dependent on a single selected data table by including the versioning information identifying and corresponding to the selected data table each of the plurality of cache entries.

62. (New) The method as recited in claim 1, wherein a record in the separate change notification table is removed.

63. (New) The method as recited in claim 62 wherein when a record in the separate change notification table corresponding to a selected data table is removed, a plurality of cache entries that have been made dependent on the selected data table referenced by the record are also removed.